R E P O R T R E S U M E S

ED 018 168 36 FL 000 820

CAUSATIVE FACTORS AND LEARNING RELATED TO PARENT PARTICIPATION. DENVER-STANFORD PROJECT ON THE CONTEXT OF INSTRUCTIONAL TELEVISION, REPORT NUMBER 13.

BY- HAYMAN, JOHN L., JR. AND OTHERS
STANFORD UNIV., CALIF.INST. FOR COMMUN. RES.

REPORT NUMBER NDEA-7A-354 PUB DATE SEP 64
DENVER BOARD OF EDUCATION, COLO., SCH. DIST. NO. 1
GRANT OEG-7-14-1380-083
EDRS PRICE MF-$0.50 HC-$2.48 60P.

DESCRIPTORS- *PARENT PARTICIPATION, *FLES, *SPANISH, *PARENT CHILD RELATIONSHIP, *PERFORMANCE FACTORS, INSTRUCTIONAL TELEVISION, AUDIOLINGUAL METHODS, PARENT ATTITUDES, INSTRUCTIONAL MATERIALS, GRADE 5, FAMILY INFLUENCE, PARENT SCHOOL RELATIONSHIP, SECOND LANGUAGE LEARNING, LANGUAGE INSTRUCTION, DEMOGRAPHY, TABLES (DATA), DENVER STANFORD PROJECT, DENVER, STANFORD,

DURING THE FIRST THREE YEARS OF THE PROJECT, PARENTS OF FIFTH-GRADE SPANISH STUDENTS WERE INVITED TO PARTICIPATE BY VIEWING THE TELEVISED INSTRUCTION WITH THE CHILD, PRACTICING SPANISH WITH HIM AT HOME, AND USING THE PARENT GUIDEBOOK AND PHONOGRAPH RECORD PROVIDED FOR THE COURSE. THE SUPERIOR PERFORMANCE OF CHILDREN OF PARENT PARTICIPANTS ON LISTENING COMPREHENSION TESTS CLEARLY INDICATED THAT IN THIS WAY PARENTS CAN ENHANCE THEIR CHILDREN'S LEARNING, BUT A PRECISE UNDERSTANDING OF THE FACTORS INVOLVED WAS LACKING. ACCORDINGLY, A QUESTIONNAIRE ADMINISTERED IN FACE-TO-FACE INTERVIEWS WITH 200 PARENT PARTICIPANTS OBTAINED INFORMATION ON THE EXTENT OF INVOLVEMENT IN EACH OF THE ACTIVITIES, ATTITUDES TOWARD THE PROGRAM AND ITS EFFECT ON FAMILY RELATIONSHIPS, AND DEMOGRAPHIC DATA. NUMEROUS TABLES PRESENTED HERE EXPLORE THE SIGNIFICANCE AND INTERRELATIONSHIPS EXISTING AMONG ALL THESE FACTORS, AND YIELD THE FOLLOWING GENERAL CONCLUSIONS--(1) PARENT PARTICIPATION IMPROVED STUDENTS' PERFORMANCE EVEN WHEN ISOLATED FROM BACKGROUND FACTORS, AND PRODUCED A GENERAL MOTIVATIONAL INCREASE WHICH AFFECTED THEIR TOTAL SCHOOL PERFORMANCE, (2) IT TENDED TO INCREASE FAMILY UNITY, (3) PARENTS' EDUCATION AND PREVIOUS TRAINING IN SPANISH WERE THE MOST IMPORTANT FACTORS AFFECTING PARTICIPATION. FOR COMPANION DOCUMENTS SEE ALSO FL 000 147, FL 000 813, AND FL 000 821. (RW)

ED018168

CAUSATIVE FACTORS AND LEARNING RELATED TO PARENT PARTICIPATION

• JOHN L. HAYMAN, JR.
• JAMES T. JOHNSON, JR.
• ALAN E. MAYERS

FL 000 820

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Denver Public Schools • Stanford University

RESEARCH ON THE CONTEXT OF INSTRUCTIONAL TELEVISION

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

CAUSATIVE FACTORS AND LEARNING RELATED TO PARENT PARTICIPATION

by

John L. Hayman, Jr.
James T. Johnson, Jr.
Alan E. Mayers

DENVER-STANFORD PROJECT
ON THE CONTEXT OF INSTRUCTIONAL TELEVISION

****

School District Number One
City and County of Denver
Denver, Colorado

Institute for Communication Research
Stanford University
Stanford, California

Report Number 13
September 1964

FL 000 820

SUMMARY

The Problem

Through the three years of the Denver-Stanford project, parents were invited to participate directly in the instruction of their children in Spanish. The analyses conducted after each of the three years showed that children whose parents participated in the program performed significantly better on tests of language ability than children whose parents did not participate. There could be little doubt, therefore, that learning was increased through parent participation. The exact mechanisms by which this occurred were unknown, however, and the potential importance of the process made more precise understanding of it desirable.

Accordingly, face-to-face interviews were conducted with 200 randomly selected parent participants in May of 1962 in order to learn more about the parents, the activities they engaged in during the project, and the relationships between these things and their children's performances on language tests.

Results

Results showed direct and statistically significant relationships between performance and two of the parental activities -- viewing the TV lessons with the child and practicing Spanish with him. Neither use of the guidebook nor of the phonograph record (devices developed for the parent participant phase of the project) had any direct effect on performance. Analysis of the parental activities in pairs, however, indicated that the guidebook was valuable because of its close association with viewing and practice. The guidebook seemed to help parents to continue their other activities, and thus it contributed indirectly to the child's learning.

Two of the background factors, education of parents and their formal training in Spanish, proved to effect the extent of participation, and, of these, formal Spanish training was the more potent. By far the best results were obtained, however, when parents were high on both factors.

Since the background factors were correlated with extent of participation, there arose the crucial question of whether participation actually caused any change in the child's performance or whether the apparent change was really an artifact of background rather than an effect of participation. The effects were separated and results showed conclusively that, although the background factors did have some effect in themselves, participation would improve the child's performance regardless of the level of the background factors. This finding was of particular importance since it meant that all parents could help their children to learn Spanish if they would participate in the program.

TABLE OF CONTENTS

PART		PAGE
I.	BACKGROUND	1
II.	METHOD	4
	The Questionnaire	4
	The Sample	5
	The Interviewers and Their Work	6
	Analysis	7
III.	PARTICIPATION AND PERFORMANCE	9
	Single Activities	9
	Pairs of Activities	11
IV.	PARENTAL BACKGROUND FACTORS AND PARTICIPATION	16
	Practice with the Child	17
	Broad Predispositional Effects	17
	Viewing with the Child	20
	The Separate Contibutions of Spanish Training and Education	22
	Parental Background Factors and the Child's Performance	28
V.	OTHER FINDINGS ON THE PARENT PARTICIPATION PROGRAM	31
	Parental Attitudes	31
	Family Unity	33
	The Pupil's Total School Performance	35
VI.	SUMMARY AND CONCLUSIONS	37
REFERENCES		41
APPENDIX A		43
APPENDIX B		45
APPENDIX C		54

CAUSATIVE FACTORS AND LEARNING RELATED TO PARENT PARTICIPATION

by

John L. Hayman, Jr.
James T. Johnson, Jr.
Alan E. Mayers

The Denver Public Schools and Stanford University's Institute for Communication Research were engaged for four years in a joint research project on the context of instructional television. The purpose of the project was to learn how instructional television can best fit into the total teaching situation. A substantial amount of research has established that television is a very effective teaching medium. Ways of combining it with other educational activities must now be considered, and the Denver-Stanford project was a beginning effort in this direction. Kenneth E. Oberholtzer was principal investigator for the Denver Public Schools and Wilbur Schramm was principal investigator for Stanford University. This is one of a number of project progress reports.

I. BACKGROUND

One of the most exciting and perhaps significant findings of the Denver-Stanford project has been that parents can help their children learn Spanish by becoming directly involved in the instructional process. As educational methodology and subject matter areas have become more complex over the last few decades, the separation between parents and their children's formal education has increased. This has resulted in frustration for both parents and teachers. Most parents want their children to do well in school, and most teachers recognize the great influence of parents on a child's performance. But neither of them has been able to determine exactly what parents could and should do to help their children. The Denver-Stanford results suggest a partial solution to this problem.

When the idea of direct parental involvement was advanced in the early

planning stages of the project, it was greeted with a good deal of skepticism for at least two reasons. First, many planners doubted that enough parents would take part to make any practical difference on a large scale Second, the value of parent help, even if it should occur, was seriously questioned. Parents, it was feared, would not provide good models for pronunciation of Spanish words, and they would be inclined to translate -- something to be strictly avoided in the early stages of the audio-lingual approach being followed.

At the same time, however, conditions of the study made a trial of parent help particularly appealing. Open-circuit telecasting was to be used, and the Spanish lessons were to be repeated in the evening so that parents and children could view them together on home television sets. In addition, the subject area was one in which, it was felt, most parents would be especially open to suggestion as to desirable teaching methods. In spite of the reservations, therefore, the favorable research conditions and the implications, should positive results occur, led to the decision to involve parents directly for at least one year.

The cooperation of the Denver County PTA was sought, and this parent organization agreed to sponsor actively the parent participation phase of the project. The PTA took responsibility for obtaining parent volunteers, supplying them with materials, and serving as liaison between parents and project personnel. The PTA, by faithful and efficient performance of these tasks, made a valid trial of direct parent involvement in instruction possible.

Parent participant results the first year of the project (the 1960-61 school year) were most encouraging. Large numbers of parents volunteered to take part, and substantial proportions of them apparently continued to work with their children through the school year. Even more impressive

were the excellent results they achieved; their children demonstrated significantly superior performance on every test. After this promising start, the method was, of course, continued through the remaining two years of active research in the project. Results, both in terms of the number of parents who participated and the achievement of their children, were strongly favorable at each trial. (For details of these results, see references 1, 2, and 3 and appendix A).

These results, obtained over a three-year span with entirely different groups of parents at each grade level each year, left no doubt that direct parent involvement in the instructional process could significantly increase the amount of Spanish children learn. While this general result was certain, however, the exact mechanisms by which parent help operated were unknown, and the fact that the method showed great promise made more precise understanding of it highly desirable. Through such understanding it could be strengthened and made more generally applicable.

At the same time, project personnel received reports of certain by-products of parent participation -- that is, of effects other than the learning of Spanish. Participation, it was said, "brought the members of the family closer together." It "helped parents see what happened in school" and "made children understand that their parents were interested." These reports attracted interest because they suggested that, aside from other effects, parent participation helped to motivate the child and because they were predictable on the theory that any shared activity tends to tie a family closer together. A check on the validity of the reports was needed.

Accordingly, a survey of parents in some 200 participating families was conducted in May of 1962, at the end of the second year of active research. This survey was designed to supply more detailed information on parent participation in general, on the precise means by which its

effects on learning were achieved, and on its influence on family life. This is a report of that survey and of its results.

II. METHOD

The Questionnaire. -- The survey was conducted through face-to-face interviewing, and the survey instrument or questionnaire (shown in Appendix B) was designed to secure information in the following three areas: 1) practices followed by the family which were related directly to Spanish instruction, 2) effects of participation on the family, and 3) demographic information on participating families. The most complicated technical problem here was deriving operational definitions of the parental activities.

The principal responsiblities of participating parents were to view the televised lessons in the evenings and to practice Spanish with their children as they were able. To aid in the practice, project personnel prepared a handbook for parents and a phonograph record to be used at home. The handbook contained general information on the background of the project and on the audio-lingual approach used in the Spanish series, instructions and suggestions for effective home participation in the program, and day-by-day lesson plans to assist in mastering the content of each television lesson. It also included a script of the phonograph records and instructions for its use. The record, consisting of common phrases, patterns, sentences, and songs, was recorded by native Spanish speakers and was designed primarily to improve pronunciation.

Thus, parent participation was conceived as consisting of four activities: viewing, practice, use of the handbook, and use of the phonograph record. While the latter two may be considered as adjuncts to the first two, each of the four was to some degree independent of the others in the sense that use of one did not necessarily entail use of the other. It was

possible, for example, to practice Spanish without viewing the TV lessons, using the handbook, or using the phonograph record.

The problem, as we have said, was to secure operational definitions of these activities. To this end, the questionnaire included items about 1) frequency of viewing "last week" and who viewed with the child each time; 2) if viewing had ceased, the number of weeks it had continued before ceasing; 3) whether the parents were practicing with the child "now," had practiced for some weeks and then ceased, or had never practiced; 4) whether, and how frequently in terms of days per week, the parents used the handbook; and 5) whether, and how much in terms of minutes per week, the parents used the phonograph record.

The "effect" questions were necessarily more subjective. Some of them dealt directly with family relationships. For example:

> Has participating in the Spanish project affected your family in any way? For instance, has it caused any problems that have bothered your family?
>
> Has participating in the Spanish project made your family feel closer?

Others were more concerned with attitudes:

> Has this been something you have enjoyed or has it been a chore?
>
> Do you think this system of having parents help their children is a good idea or a bad idea?

Finally, the questions on demographic characteristics were of the usual type, with those related to occupation and education structured to allow computation of socio-economic status by the Hollingshead two-factor technique (4).

The Sample. -- Two hundred participating fifth grade parents (parents of a child in the fifth grade) were chosen for interviewing by random selection from those whose children had taken the mid-year examination. Each set of parents was sent a letter, signed by the Superintendent of

Schools, which explained the purpose of the interview and sought their cooperation. Later all prospective respondents were contacted by telephone so that a time for the interview could be arranged.

In line with accepted survey practice, alternates were selected so that original respondents with whom interviews were not completed could be replaced. Only three of these alternates were needed, however. Interviews were completed with 197 of the original 200 respondents, giving an almost unbelievable 98.5 percent completion rate. No doubt this rate was high because school was in session, and the respondents, being parents, were much more likely to be at home than a representative sample of the general population would be. The exceptionally low refusal rate cannot be attributed to anomalies of the sample per se, however. Quite evidently the respondents viewed the survey as part of a legitimate and worthwhile enterprise.

The distributions of demographic characteristics within the sample (appendix C) show that parent participants were drawn from all elements of the general population. The upper socio-economic status elements tend to be slightly over-represented, but the distribution is not curtailed to the extent that causal relationships are masked.

The Interviewers and Their Work. -- The interviewers were PTA volunteers, only two of whom had any prior experience in survey work.* They were 20 in number, and each conducted face-to-face interviews with ten respondents. The interviewers attended a four-hour training session with the project directors, and they were paid for each completed interview.

As mentioned previously, an appointment for the interview was arranged by telephone. At the appointed time, the interviewer entered the home of the

* Two of the volunteers had interviewed a few times for a commercial survey organization.

respondent(s), made her introductory remarks, placed a blank copy of the questionnaire on a table before the respondent(s), asked the questions in the questionnaire, and wrote answers on a copy of the questionnaire in her possession. As soon as possible after completion of the interview, preferably on reaching her car, the interviewer completed the one-page form (the last page in appendix B) indicating who was present during the interview and giving the interviewer's judgment of the interest in the program shown by the parent or parents.

The interviews were conducted in May, approximately three weeks prior to the end of school. The interviewers were instructed to complete their work in one week if possible, and they were successful for the most part. In no case were more than two weeks needed for completion of all interviews.

Analysis. The analysis of survey results was performed in three parts. First was determination of the relationship between parental activities and the child's performance on the regular listening comprehension tests. In other words, did the activities cause the child to learn more Spanish? Second was an analysis of factors which predisposed parents to engage in the activities and to engage in them to the extent that the child's performance was affected. Third was consideration of the indirect effects of the program on the child, the parents, and the family in general.

Much of the data on participatory activities was necessarily inexact, for it was based on the respondent's memory over times varying from a few hours to as much as eight months. In this situation, use of broad categories rather than fine gradations on the participatory variables seemed the more practical and valid course. In fact, after some manipulation of the data these variables were dichotomized, with the break in each case at the nearest possible point to the median, and "low" and "high" participation, as used in this report, is defined by this single criterion. The definitions are as

follows:

"High viewing" refers to a parent's viewing the evening TV lessons with the child beyond the twelfth week of the first semester (even though viewing may have stopped later); "low viewing" refers to those parents who ceased viewing the lessons before or during the twelfth week.

"High practice" refers to practice "now," that is, to any type of practice with the child which continued up to the time of the interview in May. Parents who had ceased practicing at any time prior to the interview and those who had never practiced with the child were included in the "low" practice" category.

"High use of the handbook" refers to use two or more times a week. This measure does not refer to the number of weeks through which the handbook was used, but is presumably correlated with duration as well as frequency of use.

"High use of the phonograph record" refers to use in excess of five minutes per week, and "low use" refers to use for five minutes or less.

Table 1 shows the percent of the sample in each of these categories. Though the figures, especially under "Use of Record," depart to some extent from the 50 percent mark, they represent the closest to a median split which was possible with the information obtained.

The authors recognize that definitions of "high" and "low" in the above fashion is arbitrary, and that definitions according to rigid standards might be more satisfying intrinsically -- for example, it might seem that someone who quit viewing after twelve weeks, only a third of the way through the school year, should not be placed in the "high viewing" category. The relatively small sample makes the median split desirable, however, so that the numbers in each category will allow further breaks on other variables. And the method is defensible logically in that average use in the "high"

category is certain to be substantially greater than in the "low" category, making it likely that any causal relationships will be detected.

Table 1

DIVISION OF SAMPLE
ON PARTICIPATION VARIABLES

Category	Viewing	Practice	Handbook	Record
High	42.9%	57.8%	44.7%	29.8%
Low	42.2	41.6	46.6	54.0
No Response or Unusable Response	14.9	0.6	8.7	16.2
	100.0%	100.0%	100.0%	100.0%

III. PARTICIPATION AND PERFORMANCE

As stated previously, other analyses have established firmly that parent participation helps the child learn more Spanish, that is, that participation causes more favorable results on Spanish tests. The problem for the survey was to determine in what way this apparent causal relationship operated, and the first phase of analysis of survey results was to relate the participatory activities of parents to the performance of their children on the Spanish tests.

Single Activities. -- Participants were placed in low and high categories on each of the activities, according to the definitions of "low" and "high" in the preceding section, and covariance analyses were conducted for each single activity, with extent of participation the independent variable and children's performance on the second semester listening comprehension test the dependent variable. The test consisted of 50 items. Grade point average, I.Q., paragraph meaning score from the Stanford Achievement Test, and Spanish pretest score were the covariates. Viewing and practice produced F ratios which were significant at the .01 and .05 levels respectively. The F ratios for

use of the handbook and use of the record were less than unity and thus were far from even approaching significance. Therefore, as single activities, viewing and practice appear to have a real effect on the child's learning, while use of the handbook and of the record do not. Mean scores for each of the categories of the participation variables are shown in table 2.

Table 2

PUPILS' MEAN SCORES ON THE LISTENING COMPREHENSION TEST -- FOR DIFFERENT DEGREES OF PARENT PARTICIPATION

	Degree of Participation		
Activity	Low	High	Probability of Difference
Viewing	36.00	38.39	.01
Practice	35.53	38.33	.05
Use of Handbook	36.93	37.45	> .30
Use of Record	37.60	36.36	> .30

These results indicate that the children profited directly from at least two types of parent help, and this is an extremely important finding since prior results have not made clear whether parent participation could directly affect language skills or whether it was entirely a matter of motivation -- that is, an increase in the child's desire to learn Spanish because of the demonstrated interest of the parents.

The full meaning of table 2 is still not clear, however, since the listed activities are not "pure." High viewing, for example, may be accompanied by any degree of participation in the other activities, and this, in turn, may cause misleading results, particularly if incidence of use in one activity is related to incidence of use in another. Furthermore, the activities may not be simply additive in their contribution to the child's performance on the language ability test -- certain activities may be more or

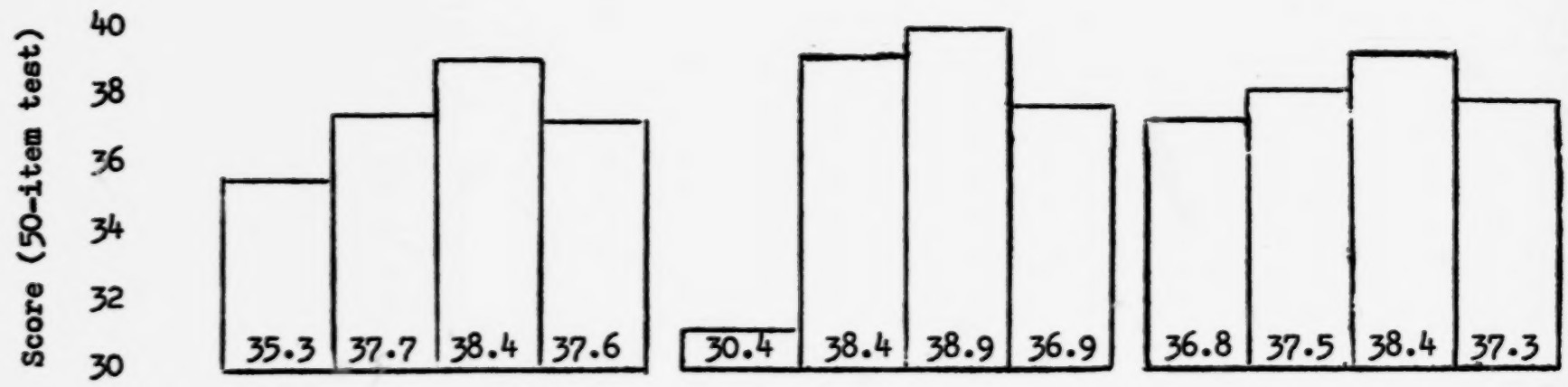
less effective when used in conjunction with other activities. These possibilities were tested by inspecting the effects of various combinations of activities.

Pairs of Activities. -- To simplify the discussion, the term "combination" will be used to describe a pair of activities on both of which the degree of participation is high. For example, the "combination" of viewing and practice consists of those parents who were high (according to the previous definitions of "high") in both viewing and practice. "Pair" will refer to two activities used together when the degree of use is not to be specified. Thus the effectiveness of a "combination" may be discussed, but the effectiveness of a "pair" will not since the degree of participation is not explicit.

The bar graphs in figure 1 represent the level of student performance associated with the various arrangements of each pair of participatory activities. "Activity 1" in the figure refers to the first activity listed for each pair, and "Activity 2" refers to the second activity listed. Thus, for the first pair, activity 1 is "viewing" and activity 2 is "practice." Mean scores associated with each arrangement are given at the base of the bar. The mean score achieved by children whose parents were high in both viewing and practice, for example, was 39.0, and, as the height of the bar shows, this was the highest mean score for any arrangement of the viewing and practice pair.

Figure 1 makes quite clear that the effects of the participatory activities are not additive. In no case is there a progressive increase from left to right, and interestingly, for four of the six pairs the "high-high" arrangement fails to reach the level of other arrangements. Though some of the variation within pairs is undoubtedly attributable to chance, the overall pattern in figure 1, which so clearly shows the effects not to be additive, suggests that a more detailed examination of the results of using the activities together is needed. What arrangement is most beneficial to learning, for

example? And what is the popularity of each arrangement, that is, the tendency of the activities to occur together?



MEAN STUDENT SCORES ON LISTENING COMPREHENSION TEST FOR PAIRS OF PARENT-CHILD ACTIVITIES

Figure 1

The tendency of the activities tc occur together is tested through the fourfold contingencies shown in table 3. Marginals are not given here since they would reflect the arbitrary median split on each variable and would thus

be artifactual. The reader will recall that low use of the phonograph record made about a seven-to-four split the closest possible approximation to the median on this variable.

Table 3

TENDENCY OF PARTICIPATORY VARIABLES
TO OCCUR TOGETHER

Practice × Viewing

Practice \ Viewing	Low	High
High	27	52
Low	40	17

$X = 17.17$

$P < .001$

Handbook × Viewing

Handbook \ Viewing	Low	High
High	13	51
Low	45	16

$X = 35.31$

$P < .001$

Record × Viewing

Record \ Viewing	Low	High
High	16	23
Low	41	34

$X = 1.91$

$.10 < P < .20$

Handbook × Practice

Handbook \ Practice	Low	High
High	25	47
Low	33	42

$X = 1.32$

$P > .20$

Record × Practice

Record \ Practice	Low	High
High	16	32
Low	38	49

$X = 1.38$

$P > .20$

Record × Handbook

Record \ Handbook	Low	High
High	17	30
Low	50	35

$X = 6.21$

$P < .02$

The strongest relationships in table 3 are for the viewing and practice and the viewing and handbook pairs. Viewing tended to be high or low as practice was high or low, and use of the handbook likewise tended to vary with viewing. Use of the handbook and of the record are also related to a statistically significant, though weaker, degree.

As for the most beneficial arrangement, when each of the combinations (remember that "combination" refers to high use of two activities) from

figure 1 is compared to the others, the following rank order emerges:

Rank	Combination	Mean Score
1.	Viewing and Practice	39.0
2.	Viewing and Handbook	38.4
3.	Practice and Handbook	37.6
4.	Handbook and Record	37.3
5.	Practice and Record	36.9
6.	Viewing and Record	32.8

The most striking fact observable in this ranking is the consistently low showing of combinations involving the phonograph record. This rather strongly supports the suggestion in table 2 that the record contributes little to listening comprehension. Inspection of the bar graphs reveals that within pairs involving the record, performance is higher when the record is used little than when it is used much. While table 3 shows that some parents used the record to the exclusion of other forms of participation, there were enough who used it in ineffective combinations to warrant some doubt as to the advisability of including it as an aid.

Combinations involving viewing (except for the one in which viewing is combined with use of the record) result in the highest performance. This suggests that viewing is a necessary condition for high performance. That it is not a sufficient condition is indicated by the fact that high viewing in the absence of high practice does not produce as high performance as in the presence of high practice.

The value of the handbook becomes evident in the combinations, though like the record it proved ineffective when considered as a single activity in table 2. The handbook is evidently closely tied to viewing of the telecasts. A strong relationship between these activities is shown in table 3.

Futhermore, free responses on the questionnaires reveal that parents feel they need the handbook in order to follow the televised lessons. Use of the handbook is thus of value to the parents and seems to contribute to the faithfulness of their viewing, even though it does not appear to contribute a great deal directly to the child's performance, Viewing without use of the handbook results in nearly as high performance as viewing with use of the handbook. Use of the handbook without viewing, on the other hand, is associated with very low performance. In view of this and of the fact that some parents gave as their reason for ceasing to participate that they had "fallen behind" or "couldn't keep up with the TV teacher," the handbook is seen to be of considerable value in spite of the fact that it is not directly related to the child's performance.

The high performance for each activity in the absence of use of the phonograph record raises the question whether any single one of these other activities might not be a sufficient condition for high performance. We have already seen that viewing appears to be a necessary condition, since either practice, use of the handbook, or use of the phonograph record without viewing results in lower performance. (See Figure 1). But we have also seen that high viewing with low practice results in lower performance. So far, then, we can say with some degree of confidence that viewing and practice appear to be necessary conditions for high performance. Are they sufficient? That viewing without the handbook is, in the few cases observed, nearly as effective as viewing with it suggests that, considering performance only and not the popularity of the combinations, the handbook is not a necessary element. But once again, the frequency with which it is used by the parents suggests that it fulfills a need for them, and in its absence they might be less likely to view. In this sense, the availability of the handbook appears to be a necessary condition for high viewing and thus indirectly for high

performance. Strictly speaking, however, viewing and practice appear to be necessary and sufficient conditions for high performance.

If but one activity were to be retained, it would probably be advisable to select practice. In each combination in which it appears, practice fares better in the absence of the other activity than does the other activity in the absence of practice, both in terms of popularity and in terms of performance. This is only partially accounted for by its close association with viewing. Children whose parents were high only on practice performed relatively well.

To summarize briefly, the results indicate that the parental activities of viewing and practice directly affect the child's performance on Spanish listening comprehension tests. That is, the child apparently learns through the parents' participation in these activities with him. Use of the handbook, on the other hand, does not directly affect learning in the manner of viewing and practice, but it appears to affect it indirectly because parents who use the handbook tend to continue to view and to practice. The record appears to have no value, at least so far as listening comprehension test results are concerned.

IV. PARENTAL BACKGROUND FACTORS AND PARTICIPATION

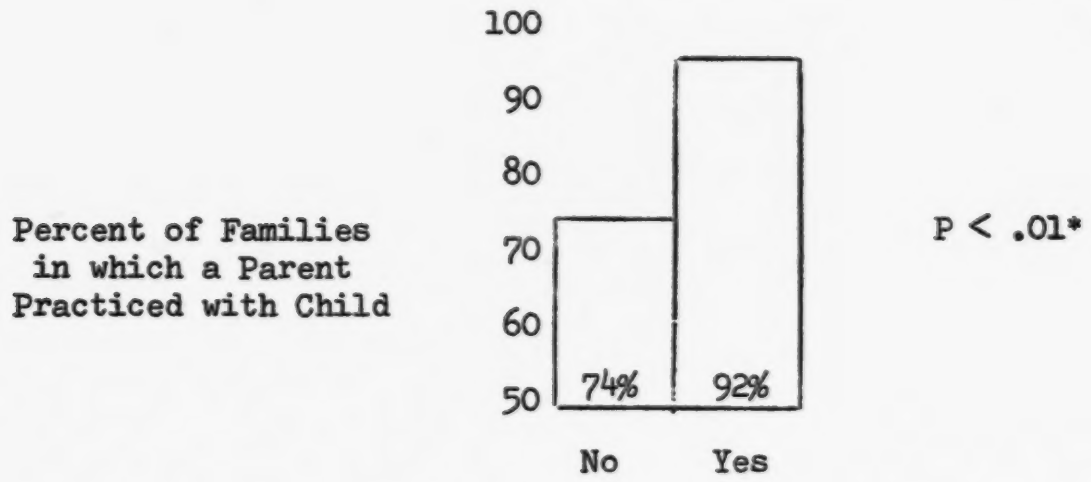
In the previous section we discussed results which establish quite firmly that parent participation, or at least certain aspects of it, does help a child to learn Spanish. Clarifying this point was a major purpose of the survey. A second major purpose was to relate participation to parental background factors -- to discover who it is that participates and, to the extent possible, why.

Preliminary analysis of the data indicated that two parental background factors, -- Spanish training and education, -- appear to be strongly related

to extent of participation. (Spanish training refers to taking at least one Spanish course in high school or college.) In this section will be discussed 1) the broad effects of either parent's Spanish training and/or education on the tendency for someone to practice with the child, 2) the relationship between which parent has had Spanish and/or college training and which parent practices, and 3), in the context of the mother's participatory behavior, the relationship between her Spanish training and/or education and the extent to which she participates.

a. Practice with the Child

Broad Predispositional Effects. -- If either parent has had any Spanish training, at least one of them is more likely to practice with the child than if neither has had Spanish. A parent practiced in 74 percent of the families in which neither parent had had Spanish, as compared with 92 percent of the families in which at least one parent had had Spanish. This difference is significant at the .01 level.



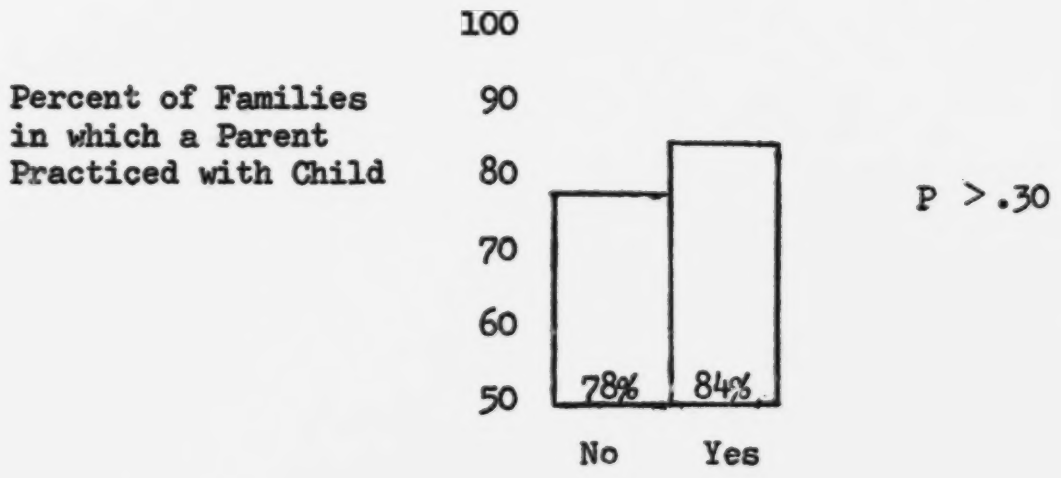
RELATIONSHIP BETWEEN SPANISH TRAINING AND TENDENCY TO PRACTICE WITH THE CHILD

Figure 2

* Unless otherwise noted, probability figures were computed via chi square with one degree of freedom. All probabilities are two-tailed.

The tendency shown in figure 2 might be expected, of course, since a parent who had taken a course in Spanish would be likely to have more interest in the subject than one who had not, at least at the beginning of the program. Further, if the parent retained anything from his own course, he would probably find it easier to practice Spanish with the child.

The effect of education, in this broad context, does not seem as strong as that of Spanish training. If a parent had attended college, it was somewhat more likely that at least one parent would practice with the child, but the difference was not statistically significant.



RELATIONSHIP BETWEEN COLLEGE ATTENDANCE AND TENDENCY TO PRACTICE WITH THE CHILD

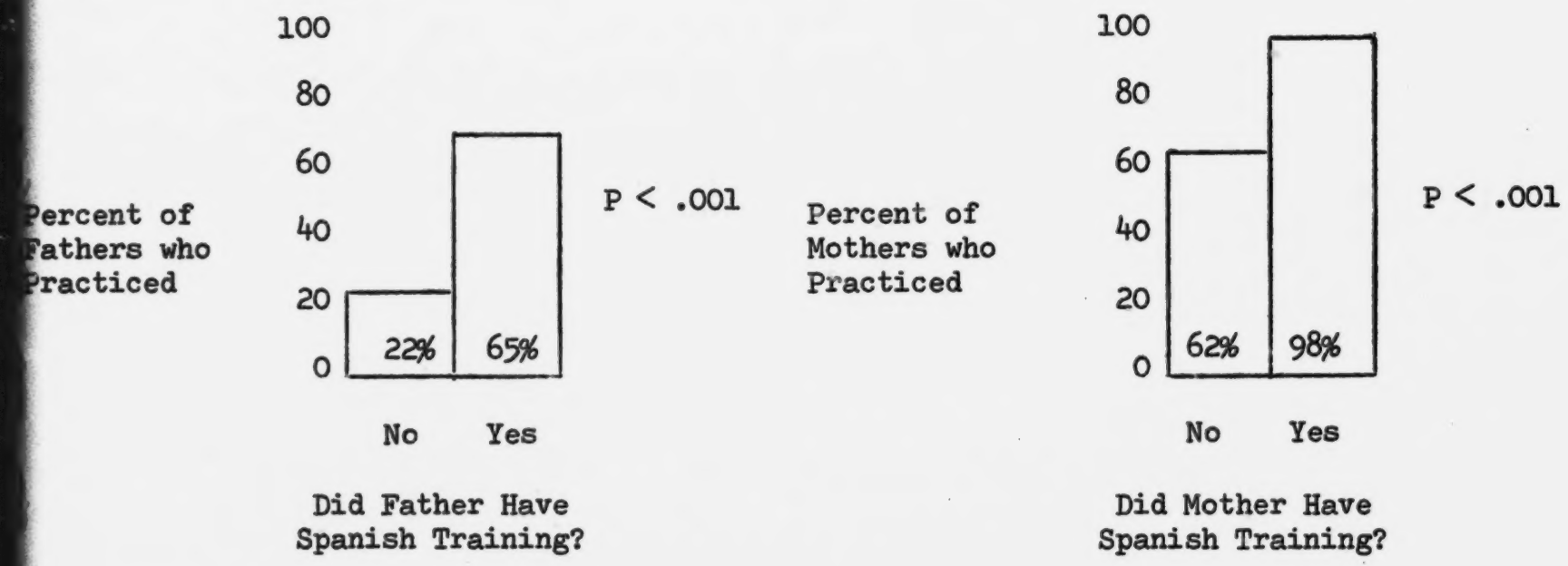
Figure 3

Figure 2 and 3 show that, very generally, a parent's having had a Spanish course or having attended college influences the likelihood of one or both parents practicing Spanish with the child, although the relationship of college attendance to practice was not statistically significant. The next question is how these factors affect the behavior of each parent.

Predispositional Effects for Each Parent. -- Figure 4 shows the rela-

tionship between each parent's Spanish training and education and his tendency to practice, and it indicates that this relationship is highly significant statistically.

Twenty-two percent of the fathers without Spanish training, as compared with 65 percent of those with training, practiced with the child. Similarly, 65 percent of mothers without Spanish training, as against 98 percent of those with training, practiced with the child.



RELATIONSHIP OF EACH PARENT'S SPANISH TRAINING TO HIS TENDENCY TO PRACTICE

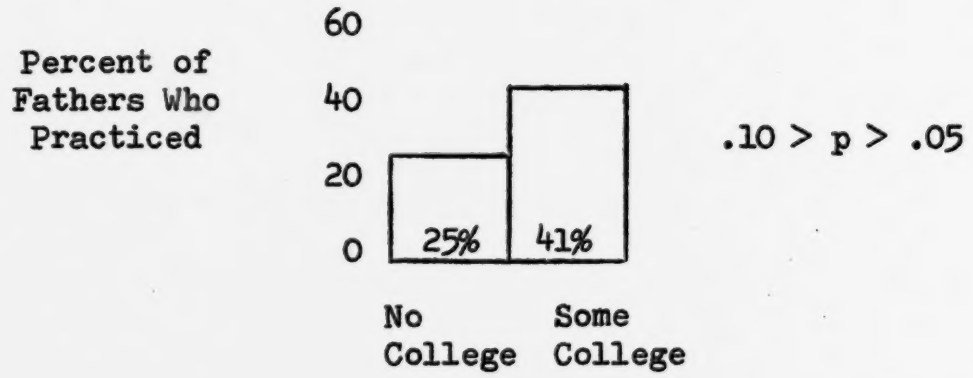
Figure 4

The mother's practicing is not significantly related to the father's Spanish training, nor is the father's practice related to the mother's training. Therefore, the Spanish training of the parent appears to be a strong and rather specific predisposing factor.

In the area of education, neither the mother's nor the father's educational background is related to the likelihood of the mother's practicing. About 70 percent of the mothers practiced with their children, regardless of whether or not the mother or the father attended college.

There is a slight relationship between the father's education and

whether he practiced, however. Twenty-five percent of the fathers without college, as compared with 41 percent of those with some college practiced with their children. The difference approached significance at the .05 level.



RELATIONSHIP OF FATHER'S EDUCATION
TO HIS TENDENCY TO PRACTICE

Figure 5

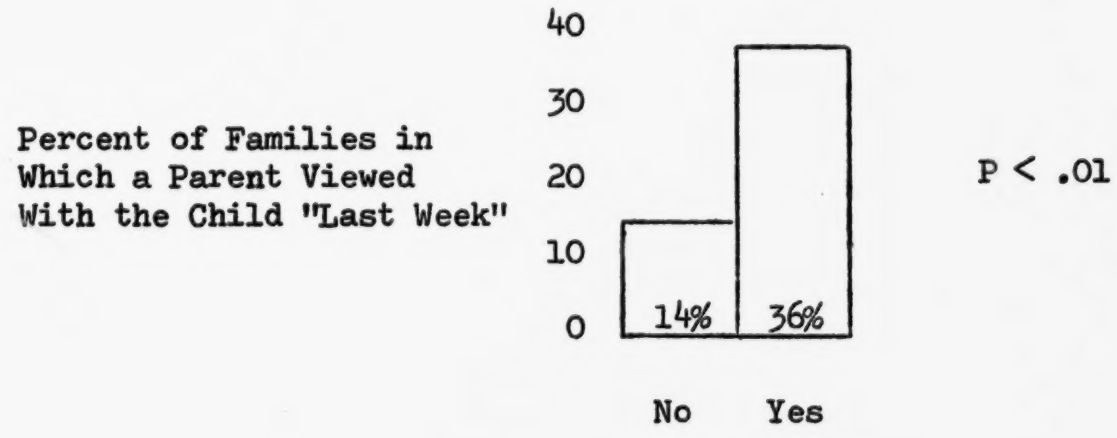
The mother's practicing is not significantly related to the father's education nor is the father's practicing related to the mother's education. The predisposing influence of parent education therefore, still appears to be relatively weak at this level of analysis.

In summary, it appears that the likelihood of either parent's practicing with the child is substantially and reliably greater if the parent has had some Spanish training, while the effect of education on practice is uncertain at this stage. So much for practice; what of the relationship of education and Spanish training to the other factor, viewing, which directly affects learning?

b. Viewing with the Child

Figures 6 and 7 show the relationship between the parents' Spanish training and education and their tendency to have viewed the Spanish telecast with the child "last week." The figures indicate strong relation-

ships between both sets of variables. That is, both Spanish training and education strongly affect the likelihood of the parents viewing the telecast with the child throughout the school year (as inferred from the parents' report of viewing "last week" in May). In fact, both relationships are statistically significant.



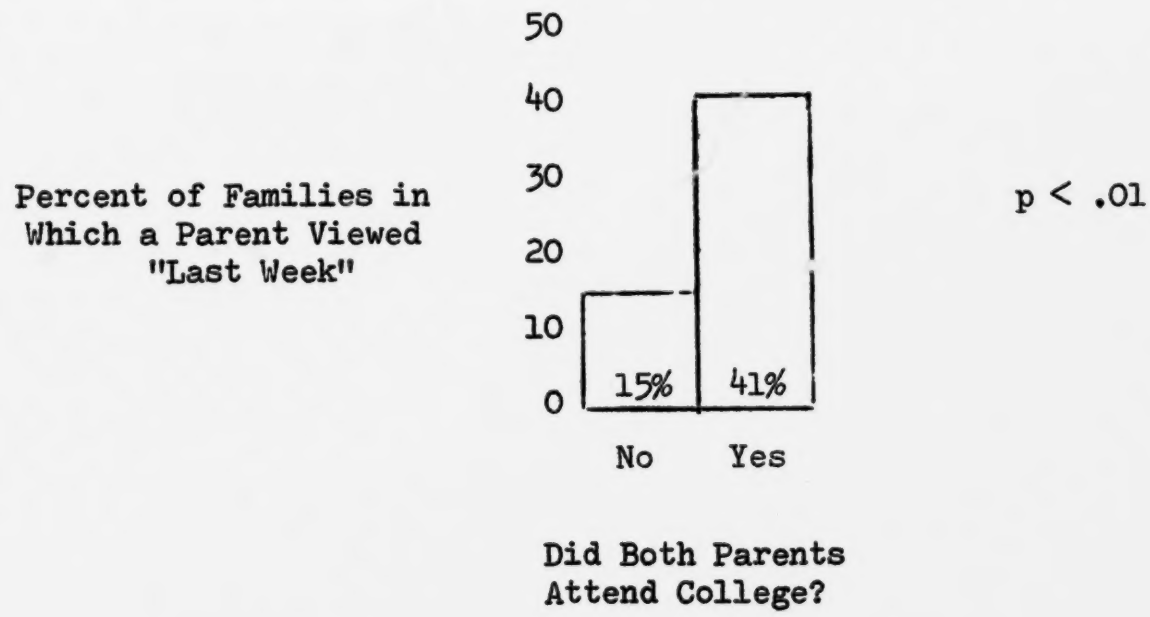
RELATIONSHIP BETWEEN SPANISH TRAINING AND TENDENCY TO VIEW WITH CHILD

Figure 6

Parent viewing appears to be more strongly related to education than is parent practice. If both parents have had some college, it is significantly more likely that a parent will view with the child until the end of the year than if only one or neither has been to college. In 41 percent of the families in which both parents had had some college, a parent had viewed with the child "last week," whereas in only 15 percent of the families in which one or neither of the parents had attended college had one of the parents viewed "last week."

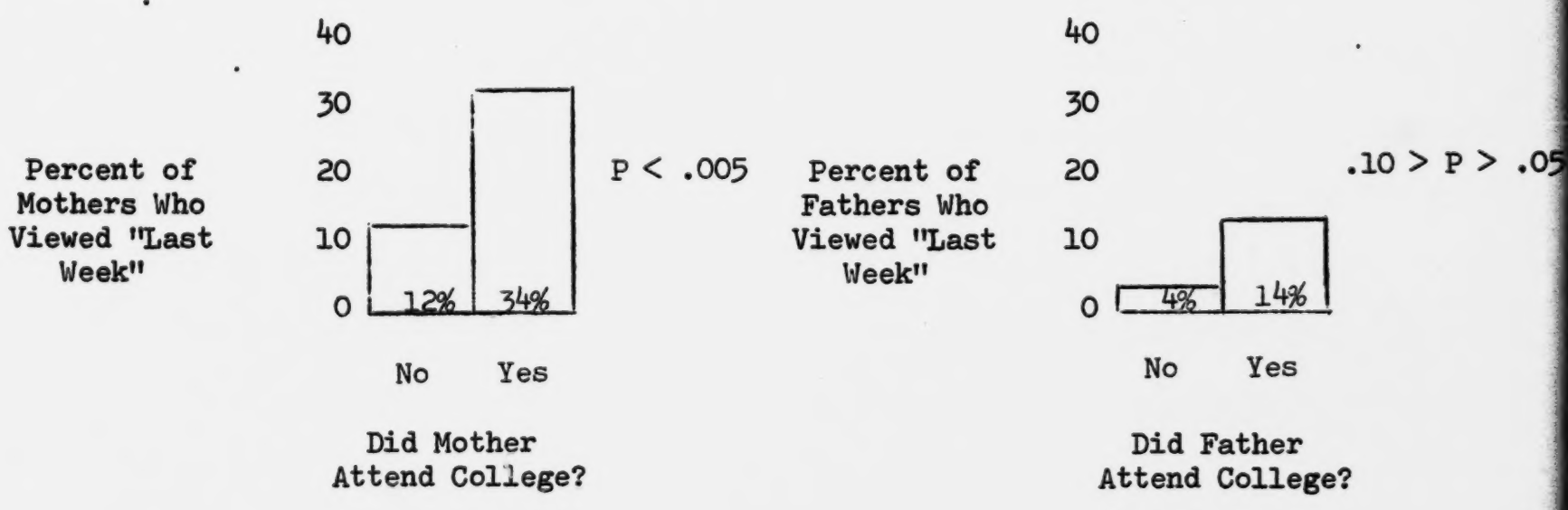
The effect of education on viewing is large and more highly significant, statistically, among mothers than among fathers. Thirty-four percent of the mothers with some college, compared with but 12 percent of

those without college, had viewed "last week." Relatively few fathers viewed. Fourteen percent of those fathers with college viewed "last week," compared with 4 percent of those without college.



RELATIONSHIP BETWEEN COLLEGE ATTENDANCE AND TENDENCY TO VIEW WITH CHILD

Figure 7



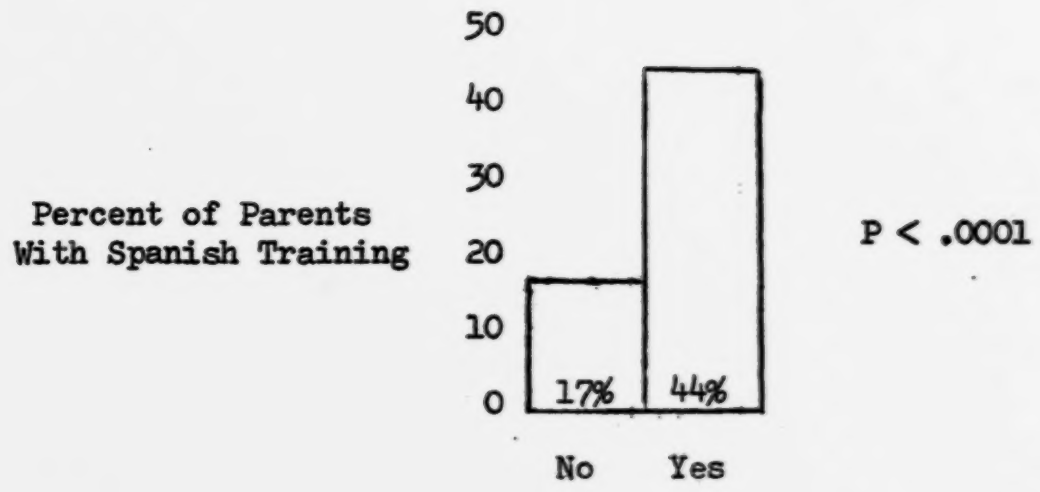
RELATIONSHIP OF EACH PARENT'S EDUCATION TO VIEWING LAST WEEK

Figure 8

c. The Separate Contributions of Spanish Training and Education

The findings presented in the preceding pages have suggested that the

parent's training in Spanish, or lack of same, is more strongly related to his predisposition to participate than is his having attended or not attended college. But Spanish training and attendance at college are significantly related to one another. Those who have had Spanish are more likely to have attended college.



RELATIONSHIP OF SPANISH TRAINING
TO COLLEGE ATTENDANCE

Figure 9

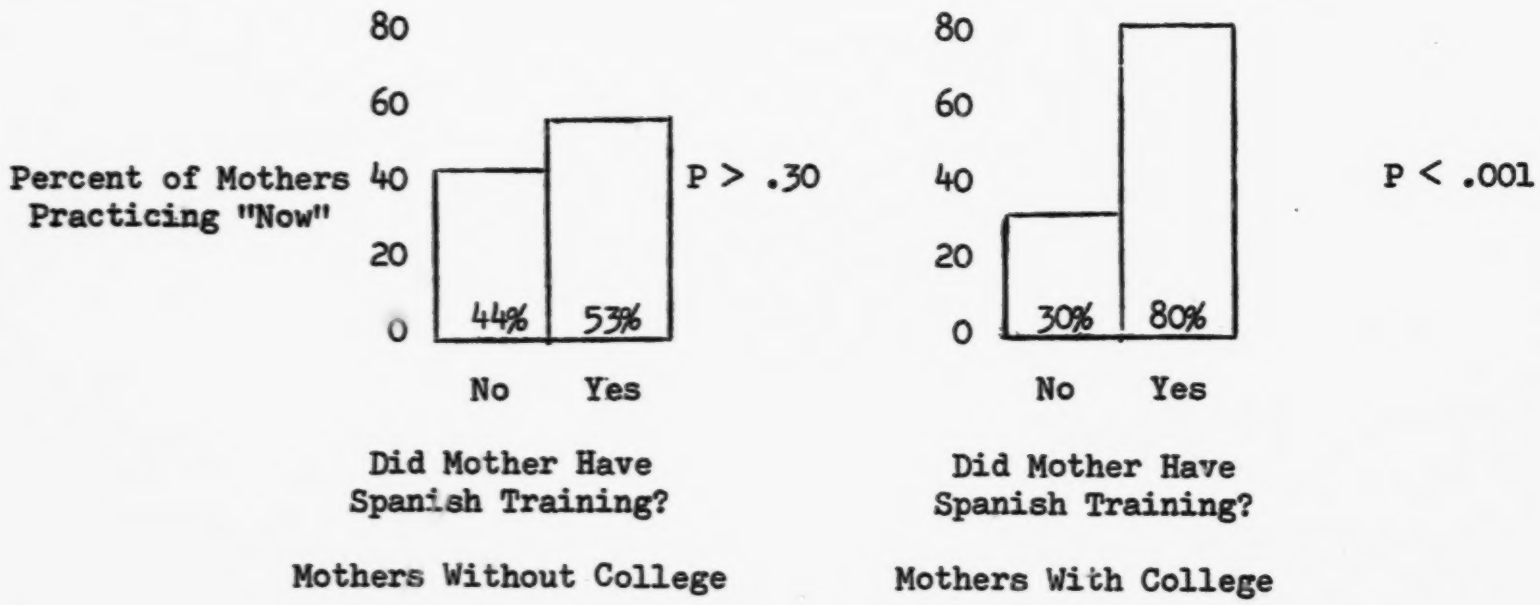
If a parent has had Spanish training without having attended college, is he still more likely to participate? Or is the effect of Spanish training on the likelihood of participation limited to those who have had Spanish in college?

The following analyses, which were undertaken in an attempt to answer these questions, pertain only to the predispositions of mothers, because mothers undertake the great bulk of the responsibility of participation. Seventy-two percent of the mothers, as against 38 percent of the fathers, had practiced with the child at one time or another. The difference is significant at $P < .0001$. (Only 10 percent of the fathers practiced without the mothers practicing as well, whereas about 50 percent

of the mothers practiced without the father's participation.) Similarly, 22 percent of the mothers, compared with 9 percent of the fathers had viewed with the child "last week" -- i.e. presumably, throughout the entire school year. This difference was significant at $P < .005$.

Practice. -- In the absence of college attendance, the mother's having had Spanish training does not appreciably increase the likelihood of her practicing with the child "now." Among mothers without college, 44 percent of those without Spanish training and 53 percent of those with Spanish training continued practicing through the year. The difference is not statistically significant. In fact, there were very few mothers who had had Spanish without having attended college.

Among mothers who had attended college, however, the relationship between Spanish training and practice is striking and highly significant statistically. Thirty percent of those without Spanish training, compared with 80 percent of those with Spanish training were practicing "now" (meaning that they had, presumably, been practicing with the child throughout the year.)

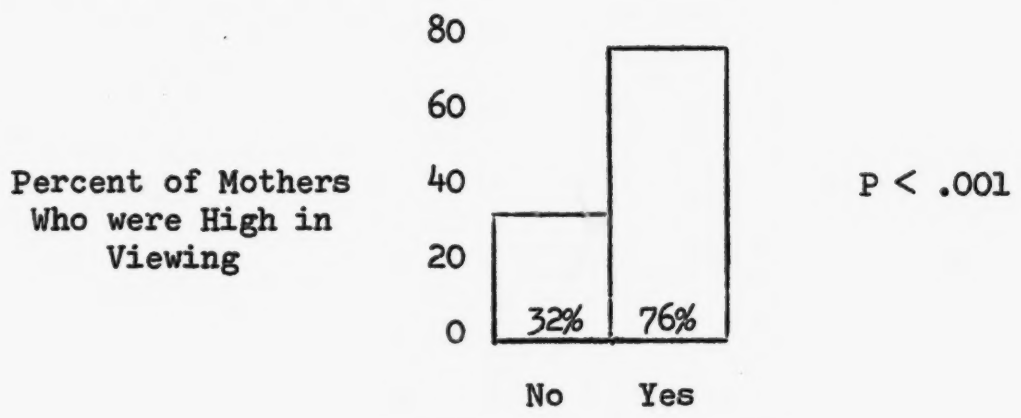


EFFECT OF SPANISH TRAINING ON PRACTICE
FOR MOTHERS WITH AND WITHOUT COLLEGE

Figure 10

It appears that there is a relationship between Spanish training and the extent of the mother's practice among mothers who have attended college. Mothers with both Spanish training and college are significantly more likely to practice throughout the year than those with either Spanish training alone, college alone, or neither. In short, both Spanish training and college attendance appear to be necessary conditions for the mother's practicing with child to the end of the school year.

Viewing. -- Much the same relationship appears in regard to the mother's viewing, that is, "high" viewing is much more likely if the mother has had both Spanish and college than if she has had either one alone or neither. Seventy-six percent of the mothers with both college and Spanish were high viewers, while only 32 percent of those with either one alone or neither were high viewers. The difference is highly significant statistically.

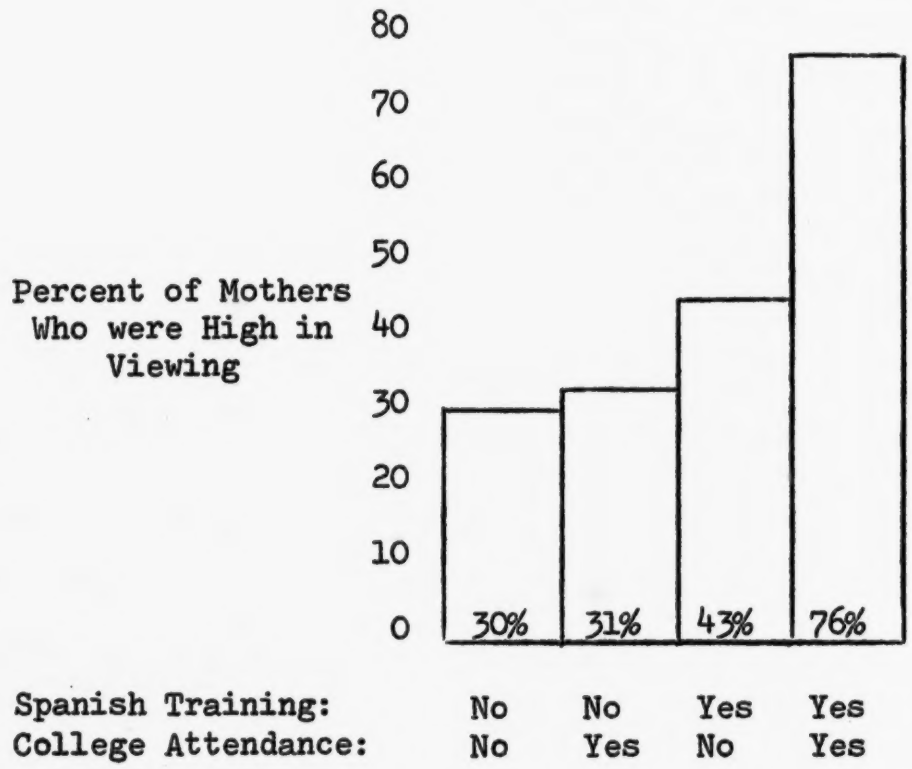


EFFECT OF BOTH SPANISH TRAINING AND COLLEGE ON VIEWING

Figure 11

While both Spanish training and education thus appear to affect viewing, a more detailed look at the data shows that, as in the case of practice, having had a Spanish course is the more potent factor. Figure 12 suggests that Spanish without college has some influence, while college without Spanish

has none. These differences are not statistically significant. Though Spanish training does appear the more potent factor, however, the most impressive result in figure 12 is the great difference made when both factors occur together. Seventy-six of the mothers with both Spanish training and college attendance are high viewers, and this proportion is far larger than the 43 percent in the next best condition -- Spanish training without college. Therefore, both conditions once more seem highly important.

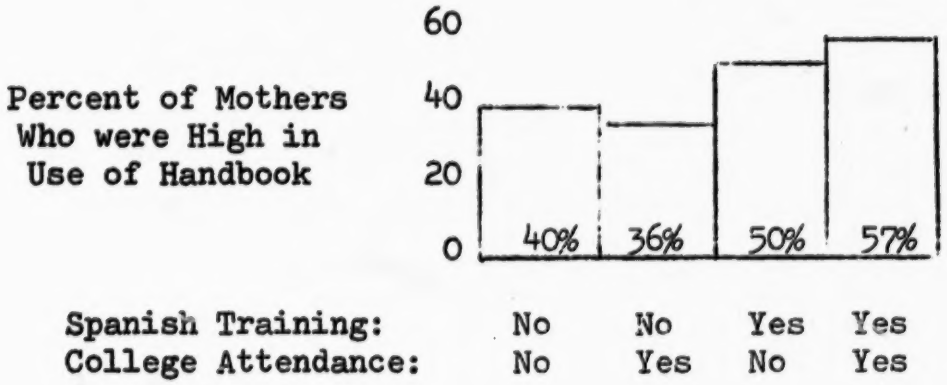


RELATIONSHIP OF MOTHER'S SPANISH TRAINING AND EDUCATION TO HER TENDENCY TO VIEW

Figure 12

Use of the Parent Handbook. -- Use of the parent handbook is not so strongly related to the mother's Spanish training and education as are viewing and practice, but the general trend is the same. Mothers with Spanish training are more likely than those without such training to use the handbook, especially if they have attended college. The difference, though not statistically significant, is consistent with findings dis-

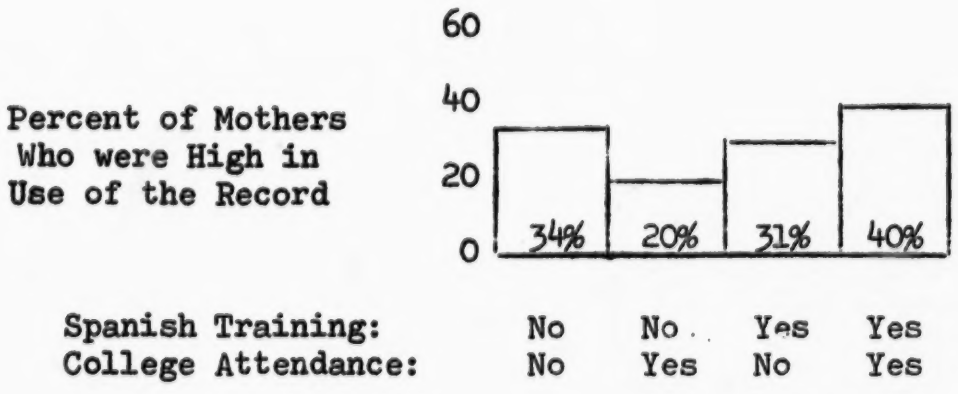
cussed in preceding sections. Those who have attended college but have not taken Spanish appear not to be more likely to use the handbook than mothers with neither college nor Spanish training.



RELATIONSHIP OF MOTHER'S SPANISH TRAINING AND EDUCATION TO HER USE OF THE HANDBOOK

Figure 13

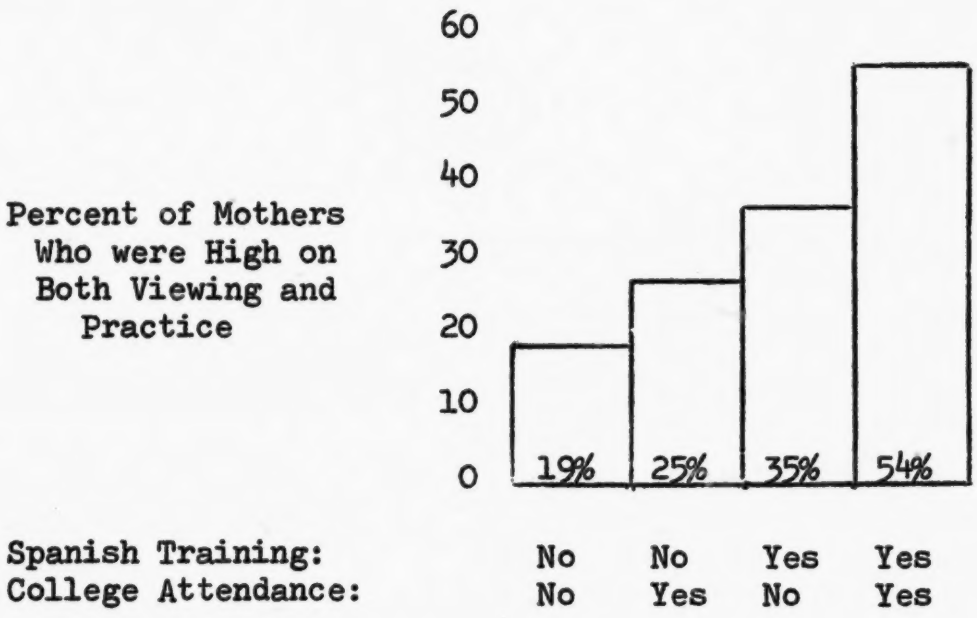
Use of the Phonograph Record. -- The predispositional effects of Spanish training and education appear to be smallest in relation to use of the phonograph record. There are no statistically significant differences in amount of use of the record associated with differences in Spanish training and education; but such differences as are found are consistent with the pattern observed in the foregoing data.



RELATIONSHIP OF MOTHER'S SPANISH TRAINING AND EDUCATION TO HER USE OF THE RECORD

Figure 14

Viewing and Practice. -- It will be remembered that the most effective combination among pairs of participatory activities was viewing and practice. The relationship of the mother's education and Spanish training to whether or not she was characterized as high on both of these activities is, therefore, of particular interest. The foregoing sections on each activity considered separately have indicated strong relationships with Spanish training and somewhat less strong relationships with education, but with an interaction between the factors which made the joint occurrence of Spanish training and college attendance particularly effective. What happens when viewing and practice are considered together? Not surprisingly, the same relationships with Spanish training and education recur.



RELATIONSHIP OF MOTHER'S SPANISH TRAINING AND EDUCATION TO BOTH VIEWING AND PRACTICE

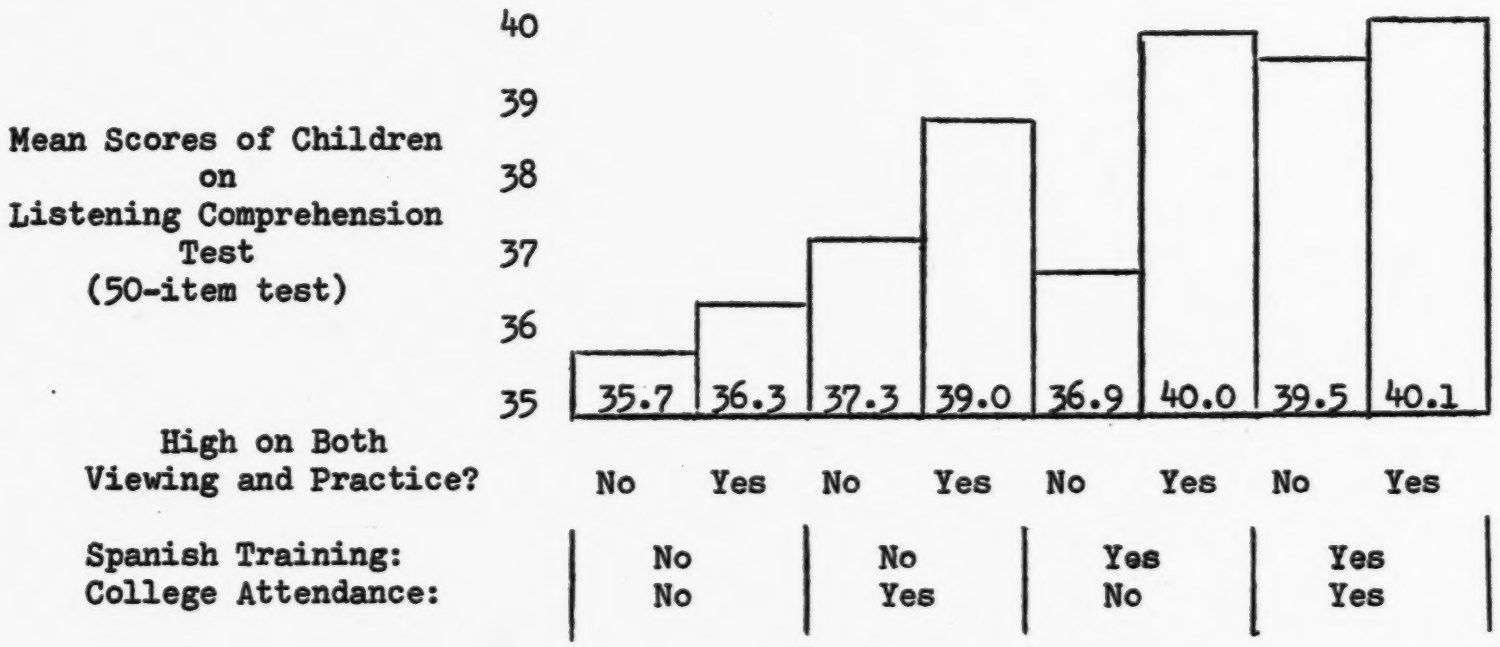
Figure 15

d. Parental Background Factors and the Child's Performance

As viewing and practice by parents were found to be necessary conditions for higher listening comprehension test scores by their children,

the finding above that viewing and practice are related to Spanish training and education is particularly important. It raises the most cogent question: If participation is related to the parents' Spanish training and education, might it be that the apparent effects of participation are really the effects of parental background factors? Might the children of high participators have performed as well even if their parents had not been high participators? In other words, does engaging in the parental activities really make any difference in the child's performance?

With the data at hand, it is possible to separate the effects of participation and of background factors and to answer the question. When the effects are so separated, the results show that participation does indeed contribute to performance.



INFLUENCE OF MOTHER'S VIEWING AND PRACTICE
AND HER SPANISH TRAINING AND COLLEGE EDUCATION
ON THE CHILD'S LISTENING COMPREHENSION TEST SCORE

Figure 16

Figure 16 shows that, for any level of Spanish training and education, children whose mothers were high on both viewing and practice scored higher

on the listening comprehension test than those whose mothers were not high viewers and practicers. Thus high viewing and practice are beneficial regardless of Spanish training and education.*

The reader will note, however, that children whose parents had either attended college or taken Spanish performed better than those whose parents had done neither; that those whose parents had done both performed better that those whose parents had done only one; and that these differences were consistent regardless of the amount of participation. Thus, we cannot say that Spanish training and education have no effects of their own on the child's performance, for they obviously do. This knowledge is important because it can help us interpret experimental findings and isolate causal effects. At the same time, the finding that viewing and practice have significant effects independent of the background factors is perhaps more important, for it gives practical implications to the whole method of parent participation. Here is something definite and specific which the parent can do which will help his child learn, and, as figure 16 indicates, this holds true regardless of the background of the parents.

Another thing about figure 16 is perhaps worth noting -- that the mother's participation made a greater difference in the child's performance if she had a Spanish course but had not attended college than if she had attended college but had no Spanish. The difference is not statistically significant, but it is interesting because of the previous finding that Spanish training was also a more potent predisposing factor than education.

---

* While these data are in terms of the mother's participation and her background, for reasons stated previously in the report, analysis of data concerning the father's participation (not reported here) reveals approximately the same relationships as described here for the mother. Thus results may be safely generalized to both parents.

V. OTHER FINDINGS ON THE PARENT PARTICIPATION PROGRAM

Parental Attitudes. -- Overall, a considerable majority of parents displayed favorable attitudes toward participation. Answers to the questions, "Has this been something you have enjoyed or has it been a chore?" and "Do you think that this system of having parents help their children is a good or a bad idea?" are given in table 4.

Table 4

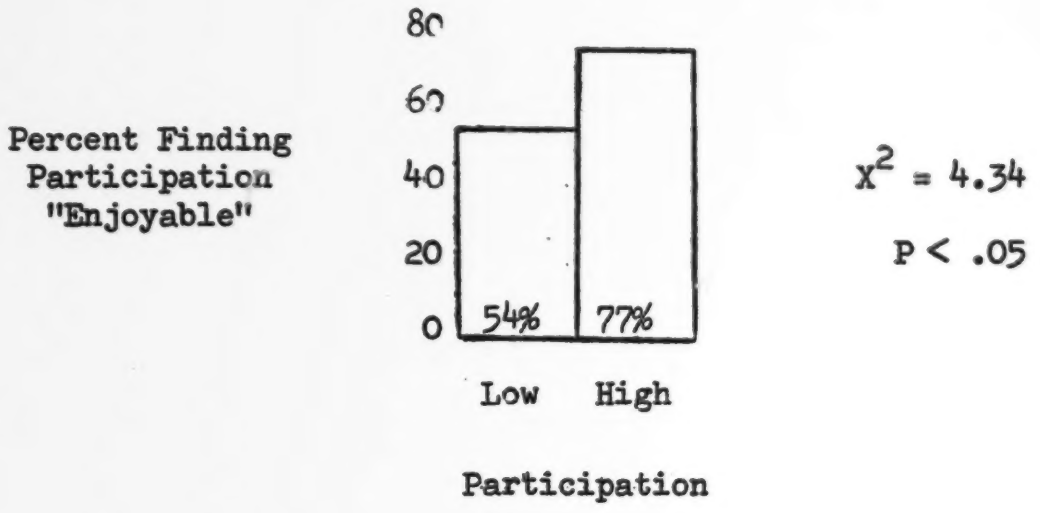
GENERAL RESPONSES TO TWO ATTITUDE QUESTIONS

Question	Response	Percent
Has this been something you have enjoyed or has it been a chore?	Enjoyed	62.6%
	A chore	7.6
	Both	15.9
	No response	13.9
		100.0%
Do you think this system of having parents help their children is a good or a bad idea?	Good idea	77.4%
	Bad idea	8.7
	No opinion	12.3
	No response	1.6
		100.0%
	(N)	(195)

The responses could well have been normative, that is, the respondent may have answered as he thought he was expected to answer. This possibility can be checked to some degree by determining the relationship between the attitudinal responses here and the degree of participation, the assumption being that those reporting participation as "enjoyable" are more likely to continue participating than the others.

As a matter of fact, there was a relationship between the attitude response and reported behavior. Those parents who were high on viewing,

practice, or both (the participatory activities shown to directly relate to the child's performance) were significantly less likely than those low on both activities to consider participation less than enjoyable. As figure 17 indicates, 77 percent of the former, as against 54 percent of the latter found participation enjoyable.



RELATIONSHIP BETWEEN ATTITUDES AND PARTICIPATION

Figure 17

This relationship suggests that expressed attitudes were valid to some extent at least. A second check, and perhaps a more powerful one, would be to relate attitudes directly to the child's performance. When this is done, some differences in performance appear associated with differences in attitudes, but they are of the nature of interactions. When participation is high (on both viewing and practice) differences in attitude seem to make little difference in performance. However, where participation is low (either on viewing or practice or both) attitude does seem to have an effect, and in the expected direction. Children whose parents were low on participation but favorable on attitude performed better than those whose parents were low on participation but unfavorable in attitude. Neither performed as well as those children whose parents

were high on participation.

Table 5

EFFECT OF ATTITUDES AND PARTICIPATION
ON THE CHILD'S PERFORMANCE

		Mean Score on Listening Comprehension	
		Participation Not Enjoyed	Participation Enjoyed
Viewing and Practice:	High on Both	37.2	37.7
	Not High on Both	34.8	36.4

Thus, there is considerable reason to believe that the parental attitudes expressed are real and that they have something to do with the effect of family participation. The figures in table 5, however, indicate that the major effect still seems to come from viewing and practice.

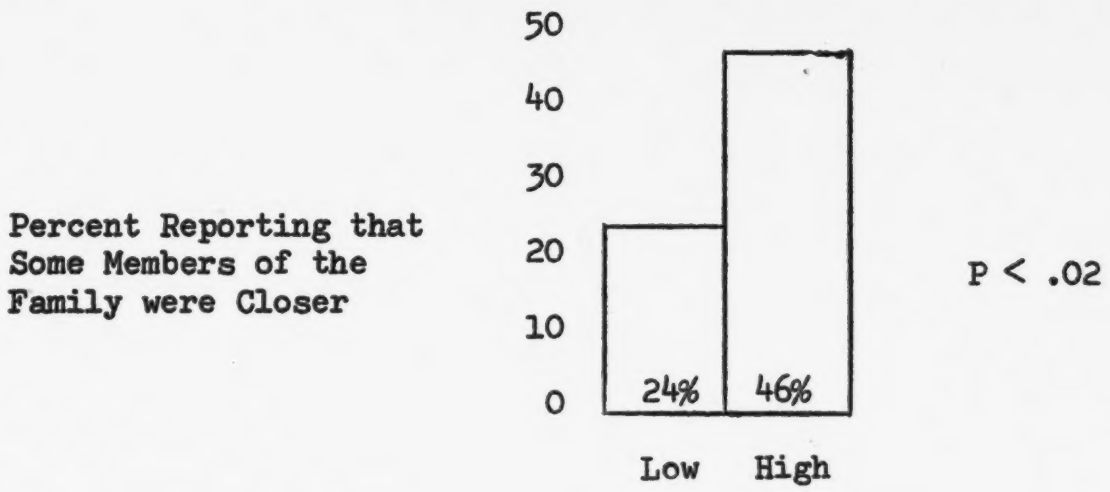
Family Unity. -- A question which was asked many times during the course of the project was whether or not parental participation had any effect on family relationships -- whether, for example, the family became a closer knit group as a result of engaging in the activities together. Informal conversations with participants led project personnel to believe that such an effect did occur in some cases at least, but to get a more systematic check, the question, "Has participating in the Spanish project made your family feel closer?" was included in the questionnaire.

About 35 percent of those who responded said that it had made the family feel closer. The great majority of those respondents said that the whole family, rather than mother and child, or father and child, felt

closer.

Though this result is gratifying, we are again faced with the problem of normative responses, and additional proof that such an effect actually occurred is needed. The results can be checked further by finding out whether the amount of practice a family indulged in was related to feelings of greater family unity. One would expect, of course, that greater family unity would result only if the parents actually participated. If greater unity were reported regardless of the degree of participation, then the responses could be interpreted as largely normative.

Figure 18 shows that a statistically significant relationship between participation and unity was found. Forty-six percent of the parents who were high in practice reported that some members of their families were closer as a result of parent participation, while only 24 percent of the low practicers so reported.



RELATIONSHIP BETWEEN PRACTICE AND FAMILY UNITY

Figure 18

From the results at hand, then, we have every reason that greater family unity was, in many cases, one of the results of taking an active

part in the parent participation program.

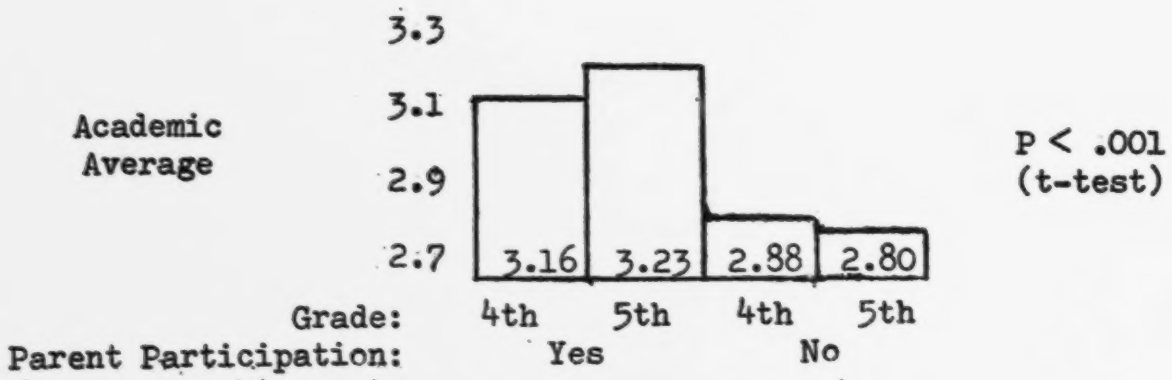
The Pupil's Total School Performance. -- As we said at the beginning of this report, the parent survey was undertaken because project personnel were uncertain just how parent participation resulted in a better performance by the child. Many doubted that the parents, few of whom knew much about Spanish, could actually be teaching the child anything, and they supported the notion that the effect was almost entirely motivational. That is, the parents demonstrated through their active participation that they were really deeply interested in the child's progress, and this in turn increased the child's desire to do well. Others thought that, although most parents were not teachers as such, perhaps the child learned as the parent learned. In other words, we were not certain whether the improved performance occurred through motivation, direct learning, or some combination of the two.

The preceding sections of this report have strongly supported the case for direct learning, and we now feel safe in stating that it is the cause of at least part of the improved performance. But what of motivation? We suspected that any motivational effect on Spanish would generalize to other subject areas, and, to test this idea, we obtained fourth- and fifth-grade academic averages for all pupils in the Spanish program, whether or not their parents were participating. Grades in English, reading, spelling, arithmetic, and social studies were used for these averages. The comparison showed that, whereas the pupils whose parents were not participating had, overall, a slightly lower average in the fifth grade than in the fourth, the opposite was true of pupils whose parents were participating. Their averages went up.

The difference in averages is rather small, but still highly significant statistically. Still, at this stage we must be cautious in inter-

preting this finding, for without further investigation we are unable to prove that it was the direct effect of parent participation. Fortunately, certain questions in the survey allow such additional analysis.

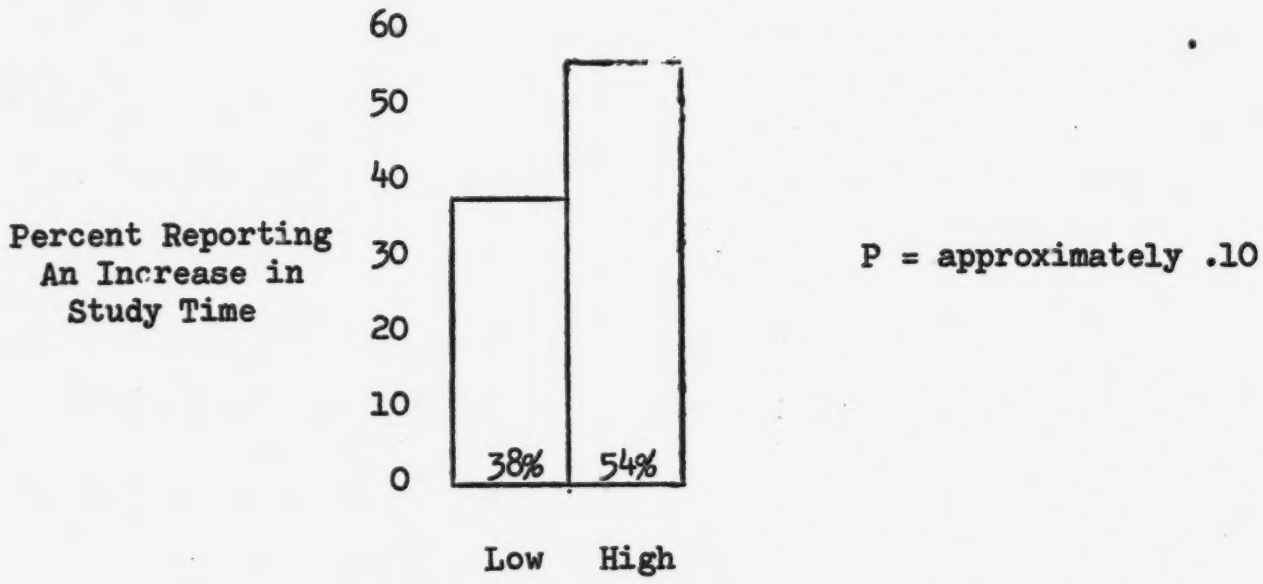
If there is a motivational effect which generalizes to other subjects we would expect that children whose parents had participated more would tend to increase their study time more than other children. Questions on the survey asked parents on which subjects the child was spending more time than last year and on which subjects the child was spending less time. When parents were high on viewing and practice, the child was more likely to have increased his study time on some subjects without decreasing it on others than when parents were low on viewing and practice.



ACADEMIC AVERAGES IN FOURTH AND FIFTH GRADES
FOR PUPILS WITH AND WITHOUT PARENT HELP IN SPANISH

Figure 19

The difference shown in figure 20 is not quite statistically significant, though the probability approaches .10. The result is further support for the motivation hypothesis, though the support is not as strong as we would like. Overall, with the results in figures 19 and 20 we have reason to believe that the motivational effect does exist and that it accounts in part for the effectiveness of the parent participation program.



RELATIONSHIP OF PARTICIPATION
TO AN INCREASE IN STUDY TIME

Figure 20

VI. SUMMARY AND CONCLUSIONS

Through the three years of the Denver-Stanford project, parents were invited to participate directly in the instruction of their children in Spanish. The television programs, which were used in school as the primary instructional device, were repeated in the evening, and parents and children could view them together. Parent volunteers were asked to practice Spanish regularly with their children, and they were given a handbook and a phonograph record to aid them in their work.

In analyses conducted after each of the three years, children whose parents participated in the program performed significantly better on tests of language ability than children whose parents did not participate. Since different groups of parents and children were involved on each occasion, and basic differences in ability between the parent and non-

parent groups were controlled through the use of covariance analyses, there could be little doubt of the value of parent participation. By what exact means this occurred was unknown, however, and the potential importance of the process made more precise understanding of it desirable. Accordingly, face-to-face interviews were conducted with 200 randomly selected parent participants in May of 1962 in order to learn more about the parents, the activities they engaged in during the project, and the relationships between these things and the child's performance on language tests.

Four types of participatory activities were defined according to designated parental responsibilities in the project: viewing the television lessons, practicing Spanish with the child, using the parent handbook, and using the phonograph record. In the analysis of data, parents were divided into "high" and "low" use categories on each activity, the division point being as close to a median split as the data would allow. Use of the activities was related first to the child's performance and then to certain background variables. Preliminary analysis indicated that the parent's education and Spanish training were the most important background factors, and in the section concerned with identifying factors which predispose parents to participate more heavily, this report dealt exclusively with these two factors. Finally, some general effects of participation in the program were considered.

Results showed direct and statistically significant relationships between two of the activities, viewing the lessons and practice, and the child's performance. When parents were high in either of these activities, the child performed significantly better than when the parents were low, and performance was increased still more with high use of both activities.

Neither use of the handbook nor use of the record had any direct effect on performance. Analysis of activities in pairs showed the handbook to be valuable because of its close association especially with viewing and to some extent with practice. The handbook seemed to help parents to continue their other activities, and thus it contributed indirectly to the child's learning.

Of the two background factors investigated, Spanish training and education, Spanish training proved to have more effect on participation. By far the best results were obtained, however, when both factors were present. Spanish training was defined as a parent's having had at least one Spanish course in high school or college, and education was defined as a parent's having attended college.

Since the background factors were correlated with participation, there arose the crucial question of whether participation actually caused any change or whether the apparent change was really an artifact of background rather than an effect of participation. The effects were separated and results showed that, although the background factors did have some effect in themselves, participation improved performance regardless of the level of background variables. This finding was of particular practical importance since it meant that all parents can help their children by participating.

Other analyses revealed that the great majority of parents had a favorable attitude toward the program, and that the favorableness of this attitude increased with participation. Also, in some cases, especially where participation was high, family unity appeared to be increased through involvement in the program. Finally, it was found that children whose parents were in the high participation category were reported to increase the amount of time spent on other school work, indicating a generalized

motivational effect through participation. A check of fourth and fifth grade academic averages showed that children of parent participants did, in fact, increase these averages significantly more than other children. So the motivational effect is evidently real.

The survey lends strong support to the value of parent participation in general, and it helps clarify the manner by which pupil performance is improved. The method has both motivational and direct effect components, and both of these are of importance. These results, together with those obtained at the end of each year of the project, leave little doubt that the effects of parent participation are real and that parents can help their children through direct involvement in education.

REFERENCES

1. Hayman, John L., Jr. and James T. Johnson, Jr. "Results of the First Year's Research in the Denver-Stanford Project." Denver-Stanford Project on the Context of Instructional Television. Report number 5. Denver, Colorado: Title VII Office, January, 1962. (Mimeo.)

2. Hayman, John L., Jr. and James T. Johnson, Jr. "Third Year Results in the Denver-Stanford Project." Denver-Stanford Project on the Context of Instructional Television. Report number 10. Denver, Colorado: Title VII Office, March, 1964. (Mimeo.)

3. Schramm, Wilbur, Kenneth E. Oberholtzer, et al. The Context of Instructional Television -- Summary Report of Research Findings 1960-1964. Stanford, California: Institute for Communication Research, 1964.

4. Hollingshead, August B. Two Factor Index of Social Position. New Haven, Connecticut: August B. Hollingshead, 1957, (Mimeo.)

APPENDICES

APPENDIX A

COVARIANCE TABLES FROM THE SECOND YEAR OF RESEARCH -- 1961-62

ONE-DIMENSIONAL COVARIANCE ANALYSES OF THE 1961-62 SIXTH GRADE LISTENING COMPREHENSION TESTS PARENT PARTICIPATION VERSUS NO PARENT PARTICIPATION

First Semester Test			
Source of Variation	Residual		
	Degrees of Freedom	Sum of Squares	Mean Square
Total	1,479	43,369.788	
Within Groups	1,478	43,247.376	29.261
Between Groups	1	122.402	122.402

$$F = \frac{122.402}{29.261} = 4.183$$

$P < .05$

Second Semester Test -- Second Semester Learning Reflected			
Source of Variation	Residual		
	Degrees of Freedom	Sum of Squares	Mean Square
Total	1,807	52,498.710	
Within Groups	1,806	52,153.929	28.878
Between Groups	1	344.781	344.781

$$F = \frac{344.781}{28.878} = 11.939$$

$P < .001$

Second Semester Test -- Full Year Learning Reflected			
Source of Variation	Residual		
	Degrees of Freedom	Sum of Squares	Mean Square
Total	1,808	106,888.869	
Within Groups	1,807	106,623.586	59.006
Between Groups	1	265.283	265.283

$$F = \frac{265.283}{59.006} = 4.496$$

$P < .05$

ADJUSTED GROUP MEANS ON THE
1961-62 SIXTH GRADE LISTENING COMPREHENSION TESTS
PARENT PARTICIPATION VERSUS NO PARENT PARTICIPATION

Semester Test	Group	
	No Parent Participation	Parent Participation
First	32.593	33.446
Second -- Second Semester Learning	30.905	32.252
Second -- Full Year Learning	30.931	32.099

APPENDIX B

QUESTIONNAIRE FOR THE PARENT SURVEY

DENVER PUBLIC SCHOOLS -- STANFORD UNIVERSITY
TITLE VII SPANISH PROJECT
PARENTS' QUESTIONNAIRE

Name of Parents_____ Child's Name_____

Child's School_____ Spanish Teacher_____

1. Have you any other children of school age besides (child's name)? yes___; no___

   (If no skip to question 4.)

   How many of the others are in elementary school? ___

   How many are in junior high or high school? ___

2. Are any other children in your family now taking Spanish? yes___; no___

   In what grades are the others who are taking Spanish?

   _____ _____ _____ _____ _____ _____ _____
   K-4 5 6 7-8 9-10 11-12 college

3. Have any other children in your family taken Spanish in the past? yes___; no___

   Are any of them living at home now? yes___; no___

   What grades are they now in?

   _____ _____ _____ _____ _____ _____ _____
   K-4 5 6 7-8 9-10 11-12 college

4. Did either you or your husband (wife) ever take Spanish?

   Father: yes___; no___ Mother: yes___; no___

   If so, was that in elementary school, high school, or college?

   How many years was Spanish taken?

   Father: elementary school___; high school___; college___; other___

   Mother: elementary school___; high school___; college___; other___

5. Did you speak any foreign language in your home before the Spanish program started:

yes___; no___

What was the language?_____

How often was it spoken?

almost all of the time___; not always but more than half the time___;

about half of the time___; often but less than half of the time___;

very little of the time___

6. Is more than one TV set available in the home? yes___; no___

7. Does the Spanish TV lesson ever come at a time when another program some member of the family would prefer to watch is on?

yes___; no___

How often is the other program watched instead of Spanish?

almost always___; not always but more than half of the time___;

about half of the time___; often but less than half of the time___;

Almost never___

How does the family determine which program will be watched?

_____

_____

_____

_____

8. Is 7:00 the best time for the evening TV lesson?

yes___; no___

If not, what time would you prefer?_____

9. Think back to last week. Spanish was on the air Monday, Wednesday, and Friday evenings. Which of these evening telecasts did:

(child's name) view alone None___; M___; W___; F___

Both parents view with (child's name) None___; M___; W___; F___

mother only view with (child's name) None___; M___; W___; F___

father only view with (child's name) None___; M___; W___; F___

other family member(s) view with (child's name) None___; M___: W___: F___

Was last week a typical week? yes___; no___

If it was not did you view more or less last week than usual?
more___; less___

If neither parent is viewing with the child, ask the questions below this box and skip to question 11. If one or both parents are viewing with the child, skip to question 10.

Did either you or your husband (wife) view the Spanish lessons with (child's name) when the series first started?

yes___; no___

How many weeks did one or both of you continue to view the lessons with (child's name)?

_____

Why did you stop viewing with (child's name)?

_____

_____

_____

10. Could the Spanish TV series be changed in any way to make it more useful for home learning?

yes___; no___

What changes do you think should be made?

_____

_____

_____

11. Other than the time you watch TV, do either of you now practice any Spanish with (child's name)?

yes___; no___

If no, did you practice at all when the program first started?

yes___; no___

If neither parent has practiced with the child, skip to question 23 and complete the questionnaire.

12. Does your family practice Spanish only at specified sessions or does it practice in other family activities when possible?

only at specific sessions___;

both at specific sessions and in other family activities when possible___;

in family activities although there are no specific sessions ___

13. How helpful did you find the Parent's Handbook?

very helpful___; somewhat helpful___; not helpful___; did not use___

If the Parent's Handbook was not used, skip to question 17.

14. How many separate days a week do you normally use the Parent's Handbook?

fewer than 1___; 1___; 2___; 3___; 4___; 5___; 6___; 7___

15. Which parts of the handbook have been most helpful?

Individual lessons: words for mastery___; words for understanding and review___; suggestions for practice___; pictures___

Appendix: Spanish-English dictionary___; English-Spanish dictionary___; aid to pronunciation ___; commonly used given names___; record script___

16. How could the Parent's Handbook be improved so that it would be more helpful to you?

_____

_____

_____

17. How helpful did you find the Spanish records?

very helpful___; somewhat helpful___; not helpful___; did not use___

If the Spanish records were not used, skip to question 20.

18. How many separate days a week do you normally use the Spanish record?

fewer than 1___; 1___; 2___; 3___; 4___; 5___; 6___; 7___

Think of a typical day you used a Spanish record. How many minutes did you use it?

0-5___; 5-10___; 10-15___; 15-20___; more than 20___

19. How could the Spanish record be improved so that it would be more helpful to you?

_____

_____

_____

20. How many separate days a week do you normally practice Spanish with (child's name)? (Do not count viewing the TV program or listening to the record in answering this question.)

fewer than 1___; 1___; 2___; 3___; 4___; 5___; 6___; 7___

What is the average number of minutes you practice Spanish with your child on one of these days?

0-5___; 5-10___; 10-15___; 15-20___; more than 20___

What types of practice have you found most useful?

_____

_____

21. Not counting the TV viewing, how many of you usually practice Spanish with (child's name)?

you alone___; your husband (wife) alone___; you and your husband (wife)___; some other family members___

22. Has this been something you have enjoyed or has it been a chore?

enjoyed___; a chore___; both___

23. Do you think that this system of having parents help their children is a good idea or a bad idea?

good idea___; bad idea___; no opinion___

24. Have (child's name))home study habits improved or not this year? (Think of time spent on <u>all</u> school subjects in answering this question.)

they have improved___; they have remained about the same___; they have become less effective___

25. What subjects do you feel (child's name) is spending more time on this year?

_____

What subjects is he spending less time on?

_____

26. How do (child's name) school marks this year compare with last year's?

they have improved___; they have remained about the same___; they have dropped___

If there is any change, what do you think is the reason?

_____

_____

_____

27. Has participating in the Spanish project affected your family in any way?

For instance, has it caused any problems which have bothered your family?

yes____; no____

If the Spanish has caused problems, what are they and how do you think they could have been avoided?

_____

_____

_____

_____

Has participating in the Spanish project made your family feel closer together?

yes____; no____

Does this include all members of your family? yes____; no____

If no, which members of your family seem closer?

_____

_____

28. Do you think that it is a good idea to teach a foreign language in the elementary schools

yes____; no____; not sure____

29. Do you think that teaching language by television is effective for elementary schools?

yes____; no____; not sure____

Is there anything in your own experience to make you think this way?

_____

_____

_____

We are not going to record your name when we transcribe this questionnaire. We would like to record a few facts about you anonymously, however, to make our results more meaningful.

30. What is the occupation of your husband (you -- if husband is answering)?

Father: exact job title _____

nature of duties _____

_____

_____

(To mother)
Are you employed too? If so, what is your occupation?

Mother: exact job title _____

nature of duties _____

_____

_____

31. What was the highest grade you went through in school?

Father: elementary school___; junior high school___; some high school___; graduated from high school___; some college___; graduated from college___; post graduate___

Mother: elementary school___; junior high school___; some high school___; graduated from high school___; some college___; graduated from college___; post graduate___

32. Would you mind telling us if you are in your 20's, 30's, etc.?

Father: 20-29___; 30-39___; 40-49___; 50-59___; 60 plus___

Mother: 20-29___; 30-39___; 40-49___; 50-59___; 60 plus___

33. The Denver Public Schools are interested in any other comments you have to make regarding the Spanish program. Are there any you would like to make? If you think of anything else, please feel free to write to the schools. (Write on the back of this sheet if more space is needed.)

THANK YOU VERY MUCH FOR HELPING US

Interviewer: After you have completed the interview and left the home, please complete these items. Do this as soon as possible. Attach this sheet to the completed questionnaire

Which parents were present during the interview? mother___; father___

Who answered most of the questions during the interview?

mother___; father___; they both answered about the same number___

How many children were present during the interview? ___

Was the child in the Spanish program present? yes___; no___

What was the attitude of each parent toward participation in the Spanish program?

mother: likes it a great deal___; likes it a little___;
is indifferent about it___; dislikes it a little___;
dislikes it a great deal___; no attitude indicated___

father: likes it a great deal___; likes it a little___;
is indifferent about it___; dislikes it a little___;
dislikes it a great deal___; no attitude indicated___

APPENDIX C

DEMOGRAPHIC DATA FOR RESPONDENTS

Occupation of Father	Number	Percent
1. Unemployed	8	5%
2. Unskilled	19	10
3. Semi-skilled & machine operators	43	22
4. Skilled manual	22	11
5. White collar, technicians, owner of little businesses	38	19
6. Administrative, small independent businesses, minor professionals	28	14
7. Business mgr., proprietor of medium sized businesses, lesser professionals	16	8
8. Higher executives, proprietor of large concerns, major professionals	1	1
9. Retired	6	3
10. Others	0	0
11. No occupation given	14	7
	195	100%

Occupation of Mother	Number	Percent
1. Unemployed	5	3%
2. Unskilled	6	3
3. Semi-skilled & machine operator	4	2
4. Skilled manual	34	17
5. White collar, technicians, owners of little businesses	8	4
6. Administrative, small independent businesses, minor professionals	11	5
7. Business mgr., proprietor of medium sized businesses, lesser professionals	0	0
8. Higher executives, proprietor of large concerns, major professionals	0	0
9. Retired	1	1
10. Others	0	0
11. No occupation given	126	65
	195	100%

Education of Father	Number	Percent
1. Elementary school	8	4%
2. Junior high school	19	10
3. Some high school	27	15
4. Graduated from high school	39	21
5. Some college	40	22
6. Graduated from college	24	13
7. Post graduate	16	9
8. No response	12	6
	185	100%

Education of Mother	Number	Percent
1. Elementary school	4	2%
2. Junior high school	17	3
3. Some high school	22	11
4. Graduated from high school	66	34
5. Some college	49	25
6. Graduated from college	29	15
7. Post graduate	4	2
8. No response	4	2
	195	94%

Index of Socio-Economic Status* (Based on Data for Father)	Number	Percent
11 - 21 (low)	9	5%
22 - 32	23	12
33 - 43	46	24
44 - 54	32	16
55 - 65	38	19
66 - 77 (High)	32	16
Cannot compute	15	8
	195	100%

Age of Father	Number	Percent
20 - 29	1	1%
30 - 39	85	44
40 - 49	82	42
50 - 59	16	8
60 plus	2	1
No response	9	5
	195	101%

Age of Mother	Number	Percent
20 - 29	14	7
30 - 39	110	56
40 - 49	60	31
50 - 59	5	3
60 plus	6	3
No response	0	0
	195	100%

* Computed by Hollingshead's two-factor method.